



1

SEQUENCE LISTING

<110> ORSER, CINDY
GROSSET, ANNE
DAVIDSON, EUGENE A.

<120> DETECTION OF CONFORMATIONALLY ALTERED PROTEINS AND
PRIONS

<130> 070538-0115

<140> 10/728,246

<141> 2003-12-04

<150> 10/161,061

<151> 2002-05-30

<150> 60/295,456

<151> 2001-05-31

<160> 61

<170> PatentIn Ver. 3.3

<210> 1

<211> 33

<212> PRT

<213> Homo sapiens

<400> 1

Val Val Ala Gly Ala Ala Ala Ala Gly Ala Met His Lys Met Asn Thr
1 5 10 15

Lys Pro Lys Met Lys His Met Ala Gly Ala Ala Ala Ala Gly Ala Val
20 25 30

Val

<210> 2

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 2

Lys Pro Lys Thr Asn Leu Lys His Val Ala Gly Ala Ala Ala Ala Gly
1 5 10 15

Ala Val Val

<210> 3
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 3
 Leu Lys His Val Ala Gly Ala Ala Ala Gly Ala Val Val
 1 5 10

<210> 4
 <211> 40
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 4
 Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Gly Leu Met Val Gly Gly Val Val
 35 40

<210> 5
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 5
 Glu Val His His Gln Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser
 1 5 10 15

Asn Lys Gly Ala Ile Ile Gly Leu
 20

<210> 6
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 6

Glu Val Arg His Gln Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser
1 5 10 15

Asn Lys Gly Ala Ile Ile Gly Leu
20

<210> 7

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 7

Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu Met
1 5 10

<210> 8

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 8

Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
1 5 10 15

Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
20 25

<210> 9

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 9

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
1 5 10 15

Gln Gln Gln Gln Gln Gln Gln
20

<210> 10
 <211> 19
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 10
 Lys Pro Lys Thr Asn Leu Lys His Val Ala Gly Ala Ala Ala Ala Gly
 1 5 10 15

Ala Val Val

<210> 11
 <211> 38
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 11
 Met Gly Ile Leu Lys Leu Gln Val Phe Leu Ile Val Leu Ser Val Ala
 1 5 10 15

Leu Asn His Leu Lys Ala Thr Pro Ile Glu Ser His Gln Val Glu Lys
 20 25 30

Arg Lys Cys Asn Thr Ala
 35

<210> 12
 <211> 25
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 12
 Met Ala Glu Ser His Leu Leu Gln Trp Leu Leu Leu Leu Leu Pro Thr
 1 5 10 15

Leu Cys Gly Pro Gly Thr Ala Ala Trp
 20 25

<210> 13
 <211> 253
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 polypeptide

<400> 13

Met	Ala	Asn	Leu	Gly	Cys	Trp	Met	Leu	Val	Leu	Phe	Val	Ala	Thr	Trp	1	5	10	15
Ser	Asp	Leu	Gly	Leu	Cys	Lys	Lys	Arg	Pro	Lys	Pro	Gly	Gly	Trp	Asn	20	25	30	
Thr	Gly	Gly	Ser	Arg	Tyr	Pro	Gly	Gln	Gly	Ser	Pro	Gly	Gly	Asn	Arg	35	40	45	
Tyr	Pro	Pro	Gln	Gly	Gly	Gly	Gly	Trp	Gly	Gln	Pro	His	Gly	Gly	Gly	50	55	60	
Trp	Gly	Gln	Pro	His	Gly	Gly	Gly	Trp	Gly	Gln	Pro	His	Gly	Gly	Gly	65	70	75	80
Trp	Gly	Gln	Pro	His	Gly	Gly	Gly	Trp	Gly	Gln	Gly	Gly	Gly	Thr	His	85	90	95	
Ser	Gln	Trp	Asn	Lys	Pro	Ser	Lys	Pro	Lys	Thr	Asn	Met	Lys	His	Met	100	105	110	
Ala	Gly	Ala	Ala	Ala	Ala	Gly	Ala	Val	Val	Gly	Gly	Leu	Gly	Gly	Tyr	115	120	125	
Met	Leu	Gly	Ser	Ala	Met	Ser	Arg	Pro	Ile	Ile	His	Phe	Gly	Ser	Asp	130	135	140	
Tyr	Glu	Asp	Arg	Tyr	Tyr	Arg	Glu	Asn	Met	His	Arg	Tyr	Pro	Asn	Gln	145	150	155	160
Val	Tyr	Tyr	Arg	Pro	Met	Asp	Glu	Tyr	Ser	Asn	Gln	Asn	Asn	Phe	Val	165	170	175	
His	Asp	Cys	Val	Asn	Ile	Thr	Ile	Lys	Gln	His	Thr	Val	Thr	Thr	Thr	180	185	190	
Thr	Lys	Gly	Glu	Asn	Phe	Thr	Glu	Thr	Asp	Val	Lys	Met	Met	Glu	Arg	195	200	205	
Val	Val	Glu	Gln	Met	Cys	Ile	Thr	Gln	Tyr	Glu	Arg	Glu	Ser	Gln	Ala	210	215	220	
Tyr	Tyr	Gln	Arg	Gly	Ser	Ser	Met	Val	Leu	Phe	Ser	Ser	Pro	Pro	Val	225	230	235	240
Ile	Leu	Leu	Ile	Ser	Phe	Leu	Ile	Phe	Leu	Ile	Val	Gly	245	250					

<210> 14
 <211> 254
 <212> PRT
 <213> Mus sp.

<400> 14

Met	Ala	Asn	Leu	Gly	Tyr	Trp	Leu	Leu	Ala	Leu	Phe	Val	Thr	Met	Trp
1				5					10					15	
Thr	Asp	Val	Gly	Leu	Cys	Lys	Lys	Arg	Pro	Lys	Pro	Gly	Gly	Trp	Asn
			20					25					30		
Thr	Gly	Gly	Ser	Arg	Tyr	Pro	Gly	Gln	Gly	Ser	Pro	Gly	Gly	Asn	Arg
		35					40					45			
Tyr	Pro	Pro	Gln	Gly	Gly	Thr	Trp	Gly	Gln	Pro	His	Gly	Gly	Gly	Trp
	50					55					60				
Gly	Gln	Pro	His	Gly	Gly	Ser	Trp	Gly	Gln	Pro	His	Gly	Gly	Ser	Trp
65				70						75					80
Gly	Gln	Pro	His	Gly	Gly	Gly	Trp	Gly	Gln	Gly	Gly	Gly	Thr	His	Asn
				85					90					95	
Gln	Trp	Asn	Lys	Pro	Ser	Lys	Pro	Lys	Thr	Asn	Leu	Lys	His	Val	Ala
			100					105					110		
Gly	Ala	Ala	Ala	Ala	Gly	Ala	Val	Val	Gly	Gly	Leu	Gly	Gly	Tyr	Met
	115						120					125			
Leu	Gly	Ser	Ala	Met	Ser	Arg	Pro	Met	Ile	His	Phe	Gly	Asn	Asp	Trp
	130					135					140				
Glu	Asp	Arg	Tyr	Tyr	Arg	Glu	Asn	Met	Tyr	Arg	Tyr	Pro	Asn	Gln	Val
145					150					155					160
Tyr	Tyr	Arg	Pro	Val	Asp	Gln	Tyr	Ser	Asn	Gln	Asn	Asn	Phe	Val	His
				165					170					175	
Asp	Cys	Val	Asn	Ile	Thr	Ile	Lys	Gln	His	Thr	Val	Thr	Thr	Thr	Thr
			180					185					190		
Lys	Gly	Glu	Asn	Phe	Thr	Glu	Thr	Asp	Val	Lys	Met	Met	Glu	Arg	Val
		195					200					205			
Val	Glu	Gln	Met	Cys	Val	Thr	Gln	Tyr	Gln	Lys	Glu	Ser	Gln	Ala	Tyr
	210					215					220				
Tyr	Asp	Gly	Arg	Arg	Ser	Ser	Ser	Thr	Val	Leu	Phe	Ser	Ser	Pro	Pro
225					230					235					240
Val	Ile	Leu	Leu	Ile	Ser	Phe	Leu	Ile	Phe	Leu	Ile	Val	Gly		
				245					250						

<210> 15
 <211> 782
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 polypeptide

<400> 15

Met	Ala	Pro	His	Arg	Pro	Ala	Pro	Ala	Leu	Leu	Cys	Ala	Leu	Ser	Leu	1	5	10	15
Ala	Leu	Cys	Ala	Leu	Ser	Leu	Pro	Val	Arg	Ala	Ala	Thr	Ala	Ser	Arg	20	25	30	
Gly	Ala	Ser	Gln	Ala	Gly	Ala	Pro	Gln	Gly	Arg	Val	Pro	Glu	Ala	Arg	35	40	45	
Pro	Asn	Ser	Met	Val	Val	Glu	His	Pro	Glu	Phe	Leu	Lys	Ala	Gly	Lys	50	55	60	
Glu	Pro	Gly	Leu	Gln	Ile	Trp	Arg	Val	Glu	Lys	Phe	Asp	Leu	Val	Pro	65	70	75	80
Val	Pro	Thr	Asn	Leu	Tyr	Gly	Asp	Phe	Phe	Thr	Gly	Asp	Ala	Tyr	Val	85	90	95	
Ile	Leu	Lys	Thr	Val	Gln	Leu	Arg	Asn	Gly	Asn	Leu	Gln	Tyr	Asp	Leu	100	105	110	
His	Tyr	Trp	Leu	Gly	Asn	Glu	Cys	Ser	Gln	Asp	Glu	Ser	Gly	Ala	Ala	115	120	125	
Ala	Ile	Phe	Thr	Val	Gln	Leu	Asp	Asp	Tyr	Leu	Asn	Gly	Arg	Ala	Val	130	135	140	
Gln	His	Arg	Glu	Val	Gln	Gly	Phe	Glu	Ser	Ala	Thr	Phe	Leu	Gly	Tyr	145	150	155	160
Phe	Lys	Ser	Gly	Leu	Lys	Tyr	Lys	Lys	Gly	Gly	Val	Ala	Ser	Gly	Phe	165	170	175	
Lys	His	Val	Val	Pro	Asn	Glu	Val	Val	Val	Gln	Arg	Leu	Phe	Gln	Val	180	185	190	
Lys	Gly	Arg	Arg	Val	Val	Arg	Ala	Thr	Glu	Val	Pro	Val	Ser	Trp	Glu	195	200	205	
Ser	Phe	Asn	Asn	Gly	Asp	Cys	Phe	Ile	Leu	Asp	Leu	Gly	Asn	Asn	Ile	210	215	220	
His	Gln	Trp	Cys	Gly	Ser	Asn	Ser	Asn	Arg	Tyr	Glu	Arg	Leu	Lys	Ala	225	230	235	240
Thr	Gln	Val	Ser	Lys	Gly	Ile	Arg	Asp	Asn	Glu	Arg	Ser	Gly	Arg	Ala	245	250	255	

Arg	Val	His	Val 260	Ser	Glu	Glu	Gly	Thr	Glu	Pro	Glu	Ala	Met	Leu	Gln
Val	Leu	Gly 275	Pro	Lys	Pro	Ala	Leu	Pro	Ala	Gly	Thr	Glu	Asp	Thr	Ala
Lys	Glu	Asp	Ala	Ala	Asn	Arg	Lys	Leu	Ala	Lys	Leu	Tyr	Lys	Val	Ser
Asn 305	Gly	Ala	Gly	Thr	Met	Ser	Val	Ser	Leu	Val 315	Ala	Asp	Glu	Asn	Pro 320
Phe	Ala	Gln	Gly	Ala 325	Leu	Lys	Ser	Glu	Asp 330	Cys	Phe	Ile	Leu	Asp 335	His
Gly	Lys	Asp	Gly 340	Lys	Ile	Phe	Val	Trp 345	Lys	Gly	Lys	Gln	Ala	Asn	Thr
Glu	Glu	Arg 355	Lys	Ala	Ala	Leu	Lys 360	Thr	Ala	Ser	Asp	Phe 365	Ile	Thr	Lys
Met	Asp 370	Tyr	Pro	Lys	Gln	Thr	Gln 375	Val	Ser	Val	Leu 380	Pro	Glu	Gly	Gly
Glu 385	Thr	Pro	Leu	Phe	Lys 390	Gln	Phe	Phe	Lys	Asn 395	Trp	Arg	Asp	Pro	Asp 400
Gln	Thr	Asp	Gly	Leu 405	Gly	Leu	Ser	Tyr	Leu 410	Ser	Ser	His	Ile	Ala 415	Asn
Val	Glu	Arg 420	Val	Pro	Phe	Asp	Ala 425	Ala	Thr	Leu	His	Thr	Ser 430	Thr	Ala
Met	Ala	Ala 435	Gln	His	Gly	Met	Asp 440	Asp	Asp	Gly	Thr	Gly 445	Gln	Lys	Gln
Ile	Trp 450	Arg	Ile	Glu	Gly	Ser 455	Asn	Lys	Val	Pro	Val 460	Asp	Pro	Ala	Thr
Tyr 465	Gly	Gln	Phe	Tyr	Gly 470	Gly	Asp	Ser	Tyr	Ile 475	Ile	Leu	Tyr	Asn	Tyr 480
Arg	His	Gly	Gly 485	Arg	Gln	Gly	Gln	Ile 490	Ile	Tyr	Asn	Trp	Gln	Gly 495	Ala
Gln	Ser	Thr	Gln 500	Asp	Glu	Val	Ala 505	Ala	Ser	Ala	Ile	Leu	Thr 510	Ala	Gln
Leu	Asp 515	Glu	Glu	Leu	Gly	Gly	Thr 520	Pro	Val	Gln	Ser	Arg 525	Val	Val	Gln
Gly	Lys 530	Glu	Pro	Ala	His	Leu 535	Met	Ser	Leu	Phe	Gly 540	Gly	Lys	Pro	Met
Ile 545	Ile	Tyr	Lys	Gly 550	Gly	Thr	Ser	Arg	Glu	Gly 555	Gly	Gln	Thr	Ala	Pro 560

Ala Ser Thr Arg Leu Phe Gln Val Arg Ala Asn Ser Ala Gly Ala Thr
565 570 575

Arg Ala Val Glu Val Leu Pro Lys Ala Gly Ala Leu Asn Ser Asn Asp
580 585 590

Ala Phe Val Leu Lys Thr Pro Ser Ala Ala Tyr Leu Trp Val Gly Thr
595 600 605

Gly Ala Ser Glu Ala Glu Lys Thr Gly Ala Gln Glu Leu Leu Arg Val
610 615 620

Leu Arg Ala Gln Pro Val Gln Val Ala Glu Gly Ser Glu Pro Asp Gly
625 630 635 640

Phe Trp Glu Ala Leu Gly Gly Lys Ala Ala Tyr Arg Thr Ser Pro Arg
645 650 655

Leu Lys Asp Lys Lys Met Asp Ala His Pro Pro Arg Leu Phe Ala Cys
660 665 670

Ser Asn Lys Ile Gly Arg Phe Val Ile Glu Glu Val Pro Gly Glu Leu
675 680 685

Met Gln Glu Asp Leu Ala Thr Asp Asp Val Met Leu Leu Asp Thr Trp
690 695 700

Asp Gln Val Phe Val Trp Val Gly Lys Asp Ser Gln Glu Glu Glu Lys
705 710 715 720

Thr Glu Ala Leu Thr Ser Ala Lys Arg Tyr Ile Glu Thr Asp Pro Ala
725 730 735

Asn Arg Asp Arg Arg Thr Pro Ile Thr Val Val Lys Gln Gly Phe Glu
740 745 750

Pro Pro Ser Phe Val Gly Trp Phe Leu Gly Trp Asp Asp Asp Tyr Trp
755 760 765

Ser Val Asp Pro Leu Asp Arg Ala Met Ala Glu Leu Ala Ala
770 775 780

<210> 16

<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 16

Tyr Glu Arg Leu Lys Ala Thr Gln Val Ser Lys Gly Ile Arg Asp Asn
1 5 10 15

Glu Arg Ser Gly Arg Ala Arg Val His Val Ser Glu Glu Gly Thr Glu
20 25 30

Pro Glu Ala Met
35

<210> 17
<211> 146
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 17
Met Ala Gly Pro Leu Arg Ala Pro Leu Leu Leu Leu Ala Ile Leu Ala
1 5 10 15
Val Ala Leu Ala Val Ser Pro Ala Ala Gly Ser Ser Pro Gly Lys Pro
20 25 30
Pro Arg Leu Val Gly Gly Pro Met Asp Ala Ser Val Glu Glu Glu Gly
35 40 45
Val Arg Arg Ala Leu Asp Phe Ala Val Gly Glu Tyr Asn Lys Ala Ser
50 55 60
Asn Asp Met Tyr His Ser Arg Ala Leu Gln Val Val Arg Ala Arg Lys
65 70 75 80
Gln Ile Val Ala Gly Val Asn Tyr Phe Leu Asp Val Glu Leu Gly Arg
85 90 95
Thr Thr Cys Thr Lys Thr Gln Pro Asn Leu Asp Asn Cys Pro Phe His
100 105 110
Asp Gln Pro His Leu Lys Arg Lys Ala Phe Cys Ser Phe Gln Ile Tyr
115 120 125
Ala Val Pro Trp Gln Gly Thr Met Thr Leu Ser Lys Ser Thr Cys Gln
130 135 140
Asp Ala
145

<210> 18
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 18
Glu Glu Glu Val Ser Ala Asp Met Pro Pro Pro Pro Met Asp Ala Ser
1 5 10 15

Val Glu Glu Glu
20

<210> 19

<211> 315

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 19

Met	Ala	Thr	Leu	Glu	Lys	Leu	Met	Lys	Ala	Phe	Glu	Ser	Leu	Lys	Ser	1	5	10	15
Phe	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	20	25	30	
Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	35	40	45	
Pro	Pro	Pro	Gln	Leu	Pro	Gln	Pro	Pro	Pro	Gln	Ala	Gln	Pro	Leu	Leu	50	55	60	
Pro	Gln	Pro	Gln	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Gly	Pro	65	70	75	80
Ala	Val	Ala	Glu	Glu	Pro	Leu	His	Arg	Pro	Lys	Lys	Glu	Leu	Ser	Ala	85	90	95	
Thr	Lys	Lys	Asp	Arg	Val	Asn	His	Cys	Leu	Thr	Ile	Cys	Glu	Asn	Ile	100	105	110	
Val	Ala	Gln	Ser	Val	Arg	Asn	Ser	Pro	Glu	Phe	Gln	Lys	Leu	Leu	Gly	115	120	125	
Ile	Ala	Met	Glu	Leu	Phe	Leu	Leu	Cys	Ser	Asp	Asp	Ala	Glu	Ser	Asp	130	135	140	
Val	Arg	Met	Val	Ala	Asp	Glu	Cys	Leu	Asn	Lys	Val	Ile	Lys	Ala	Leu	145	150	155	160
Met	Asp	Ser	Asn	Leu	Pro	Arg	Leu	Gln	Leu	Glu	Leu	Tyr	Lys	Glu	Ile	165	170	175	
Lys	Lys	Asn	Gly	Ala	Pro	Arg	Ser	Leu	Arg	Ala	Ala	Leu	Trp	Arg	Phe	180	185	190	
Ala	Glu	Leu	Ala	His	Leu	Val	Arg	Pro	Gln	Lys	Cys	Arg	Pro	Tyr	Leu	195	200	205	
Val	Asn	Leu	Leu	Pro	Cys	Leu	Thr	Arg	Thr	Ser	Lys	Arg	Pro	Glu	Glu	210	215	220	

Ser Val Gln Glu Thr Leu Ala Ala Ala Val Pro Lys Ile Met Ala Ser
225 230 235 240

Phe Gly Asn Phe Ala Asn Asp Asn Glu Ile Lys Val Leu Leu Lys Ala
245 250 255

Phe Ile Ala Asn Leu Lys Ser Ser Ser Pro Thr Ile Arg Arg Thr Ala
260 265 270

Ala Gly Ser Ala Val Ser Ile Cys Gln His Ser Arg Arg Thr Gln Tyr
275 280 285

Phe Tyr Ser Trp Leu Leu Asn Val Leu Leu Gly Leu Leu Val Pro Val
290 295 300

Glu Asp Glu His Ser Thr Leu Leu Ile Leu Gly
305 310 315

<210> 20

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 20

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
1 5 10 15

Gln

<210> 21

<211> 89

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 21

Met Gly Ile Leu Lys Leu Gln Val Phe Leu Ile Val Leu Ser Val Ala
1 5 10 15

Leu Asn His Leu Lys Ala Thr Pro Ile Glu Ser His Gln Val Glu Lys
20 25 30

Arg Lys Cys Asn Thr Ala Thr Cys Ala Thr Gln Arg Leu Ala Asn Phe
35 40 45

Leu Val His Ser Ser Asn Asn Phe Gly Ala Ile Leu Ser Ser Thr Asn
50 55 60

Val Gly Ser Asn Thr Tyr Gly Lys Arg Asn Ala Val Glu Val Leu Lys
 65 70 75 80

Arg Glu Pro Leu Asn Tyr Leu Pro Leu
 85

<210> 22

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 22

Leu Ala Asn Phe Val
 1 5

<210> 23

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 23

Val Phe Asn Ala Leu Pro Pro Pro Pro Leu Ala Asn Phe Val
 1 5 10

<210> 24

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 24

Phe Leu Val His Ser Ser
 1 5

<210> 25

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 25

Ser Ser His Val Leu Phe Pro Pro Pro Phe Leu Val His Ser Ser
 1 5 10 15

<210> 26

<211> 147

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 polypeptide

<400> 26

Met Ala Ser His Arg Leu Leu Leu Leu Cys Leu Ala Gly Leu Val Phe
 1 5 10 15

Val Ser Glu Ala Gly Pro Thr Gly Thr Gly Glu Ser Lys Cys Pro Leu
 20 25 30

Met Val Lys Val Leu Asp Ala Val Arg Gly Ser Pro Ala Ile Asn Val
 35 40 45

Ala Val His Val Phe Arg Lys Ala Ala Asp Asp Thr Trp Glu Pro Phe
 50 55 60

Ala Ser Gly Lys Thr Ser Glu Ser Gly Glu Leu His Gly Leu Thr Thr
 65 70 75 80

Glu Glu Glu Phe Val Glu Gly Ile Tyr Lys Val Glu Ile Asp Thr Lys
 85 90 95

Ser Tyr Trp Lys Ala Leu Gly Ile Ser Pro Phe His Glu His Ala Glu
 100 105 110

Val Val Phe Thr Ala Asn Asp Ser Gly Pro Arg Arg Tyr Thr Ile Ala
 115 120 125

Ala Leu Leu Ser Pro Tyr Ser Tyr Ser Thr Thr Ala Val Val Thr Asn
 130 135 140

Pro Lys Glu
 145

<210> 27

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 27

Glu Ser Val Phe Val Leu Gly Ala Leu Pro Pro Pro Pro Leu Ala Gly
 1 5 10 15

Leu Val Phe Val Ser Glu
20

<210> 28
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<221> MOD_RES
<222> (8)
<223> Variable amino acid

<220>
<221> MOD_RES
<222> (25)
<223> Variable amino acid

<400> 28
Val Ala Ala Ala Lys Leu Arg Xaa Val Val Thr Ser Arg Gln Pro Pro
1 5 10 15
Pro Pro Gln Arg Ser Thr Val Val Xaa Arg Leu Lys Ala Ala Ala Val
20 25 30

<210> 29
<211> 33
<212> PRT
<213> Mus sp.

<400> 29
Val Val Ala Gly Ala Ala Ala Ala Gly Ala Val His Lys Leu Asn Thr
1 5 10 15
Lys Pro Lys Leu Lys His Val Ala Gly Ala Ala Ala Ala Gly Ala Val
20 25 30

Val

<210> 30
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
 <221> MOD_RES
 <222> (7)
 <223> Variable amino acid

<400> 30
 Gln Arg Ser Thr Val Val Xaa Arg Leu Lys Ala Ala Ala Val
 1 5 10

<210> 31
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 31
 Ala Ala Ala Val
 1

<210> 32
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<220>
 <221> MOD_RES
 <222> (8)
 <223> Variable amino acid

<400> 32
 Val Ala Ala Ala Lys Leu Arg Xaa Val Val Thr Ser Arg Gln
 1 5 10

<210> 33
 <211> 33
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 33
 Val Val Ala Gly Ala Ala Ala Gly Ala Met His Lys Met Lys Pro
 1 5 10 15
 Lys Thr Asn Met Lys His Met Ala Gly Ala Ala Ala Gly Ala Val
 20 25 30

Val

<210> 34
 <211> 19
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 34
 Val Val Ala Gly Ala Ala Ala Ala Gly Ala Val His Lys Leu Asn Thr
 1 5 10 15

Lys Pro Lys

<210> 35
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 35
 Val Val Ala Gly Ala Ala Ala Ala Gly Ala Val His Lys Leu
 1 5 10

<210> 36
 <211> 40
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 36
 Val Val Gly Gly Val Met Leu Gly Ile Ile Ala Gly Lys Asn Ser Gly
 1 5 10 15

Val Asp Glu Ala Phe Phe Val Leu Lys Gln His His Val Glu Tyr Gly
 20 25 30

Ser Asp His Arg Phe Glu Ala Asp
 35 40

<210> 37
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 37
 Leu Gly Ile Ile Ala Gly Lys Asn Ser Gly Val Asp Glu Ala Phe Phe
 1 5 10 15
 Val Leu Lys Gln His His Val Glu
 20

<210> 38
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 38
 Leu Gly Ile Ile Ala Gly Lys Asn Ser Gly Val Asp Glu Ala Phe Phe
 1 5 10 15
 Val Leu Lys Gln His Arg Val Glu
 20

<210> 39
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 39
 Met Leu Gly Ile Ile Ala Gly Lys Asn Ser Gly
 1 5 10

<210> 40
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 40

Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 1 5 10 15

Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 20 25

<210> 41

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 41

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
 1 5 10 15

Gln Gln Gln Gln Gln Gln Gln
 20

<210> 42

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 42

Val Val Ala Gly Ala Ala Ala Ala Gly Ala Val His Lys Leu Asn Thr
 1 5 10 15

Lys Pro Lys

<210> 43

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 43

Ala Thr Asn Cys Lys Arg Lys Glu Val Gln His Ser Glu Ile Pro Thr
 1 5 10 15

Ala Lys Leu His Asn Leu Ala Val Ser Leu Val Ile Leu Phe Val Gln
 20 25 30

Leu Lys Leu Ile Gly Met
35

<210> 44
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 44
Trp Ala Ala Thr Gly Pro Gly Cys Leu Thr Pro Leu Leu Leu Leu Leu
1 5 10 15

Trp Gln Leu Leu His Ser Glu Ala Met
20 25

<210> 45
<211> 253
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 45
Gly Val Ile Leu Phe Ile Leu Phe Ser Ile Leu Leu Ile Val Pro Pro
1 5 10 15

Ser Ser Phe Leu Val Met Ser Ser Gly Arg Gln Tyr Tyr Ala Gln Ser
20 25 30

Glu Arg Glu Tyr Gln Thr Ile Cys Met Gln Glu Val Val Arg Glu Met
35 40 45

Met Lys Val Asp Thr Glu Thr Phe Asn Glu Gly Lys Thr Thr Thr Thr
50 55 60

Val Thr His Gln Lys Ile Thr Ile Asn Val Cys Asp His Val Phe Asn
65 70 75 80

Asn Gln Asn Ser Tyr Glu Asp Met Pro Arg Tyr Tyr Val Gln Asn Pro
85 90 95

Tyr Arg His Met Asn Glu Arg Tyr Tyr Arg Asp Glu Tyr Asp Ser Gly
100 105 110

Phe His Ile Ile Pro Arg Ser Met Ala Ser Gly Leu Met Tyr Gly Gly
115 120 125

Leu Gly Gly Val Val Ala Gly Ala Ala Ala Ala Gly Ala Met His Lys
130 135 140

Met Asn Thr Lys Pro Lys Ser Pro Lys Asn Trp Gln Ser His Thr Gly
 145 150 155 160

Gly Gly Gln Gly Trp Gly Gly Gly His Pro Gln Gly Trp Gly Gly Gly
 165 170 175

His Pro Gln Gly Trp Gly Gly Gly His Pro Gln Gly Trp Gly Gly Gly
 180 185 190

His Pro Gln Gly Trp Gly Gly Gly Gly Gln Pro Pro Tyr Arg Asn Gly
 195 200 205

Gly Pro Ser Gly Gln Gly Pro Tyr Arg Ser Gly Gly Thr Asn Trp Gly
 210 215 220

Gly Pro Lys Pro Arg Lys Lys Cys Leu Gly Leu Asp Ser Trp Thr Ala
 225 230 235 240

Val Phe Leu Val Leu Met Trp Cys Gly Leu Asn Ala Met
 245 250

<210> 46

<211> 254

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 polypeptide

<400> 46

Gly Val Ile Leu Phe Ile Leu Phe Ser Ile Leu Leu Ile Val Pro Pro
 1 5 10 15

Ser Ser Phe Leu Val Thr Ser Ser Ser Arg Arg Gly Asp Tyr Tyr Ala
 20 25 30

Gln Ser Glu Lys Gln Tyr Gln Thr Val Cys Met Gln Glu Val Val Arg
 35 40 45

Glu Met Met Lys Val Asp Thr Glu Thr Phe Asn Glu Gly Lys Thr Thr
 50 55 60

Thr Thr Val Thr His Gln Lys Ile Thr Ile Asn Val Cys Asp His Val
 65 70 75 80

Phe Asn Asn Gln Asn Ser Tyr Gln Asp Val Pro Arg Tyr Tyr Val Gln
 85 90 95

Asn Pro Tyr Arg Tyr Met Asn Glu Arg Tyr Tyr Arg Asp Glu Trp Asp
 100 105 110

Asn Gly Phe His Ile Met Pro Arg Ser Met Ala Ser Gly Leu Met Tyr
 115 120 125

Gly Gly Leu Gly Gly Val Val Ala Gly Ala Ala Ala Ala Gly Ala Val
 130 135 140

His Lys Leu Asn Thr Lys Pro Lys Ser Pro Lys Asn Trp Gln Asn His
 145 150 155 160
 Thr Gly Gly Gly Gln Gly Trp Gly Gly Gly His Pro Gln Gly Trp Ser
 165 170 175
 Gly Gly His Pro Gln Gly Trp Ser Gly Gly His Pro Gln Gly Trp Gly
 180 185 190
 Gly Gly His Pro Gln Gly Trp Thr Gly Gly Gln Pro Pro Tyr Arg Asn
 195 200 205
 Gly Gly Pro Ser Gly Gln Gly Pro Tyr Arg Ser Gly Gly Thr Asn Trp
 210 215 220
 Gly Gly Pro Lys Pro Arg Lys Lys Cys Leu Gly Val Asp Thr Trp Met
 225 230 235 240
 Thr Val Phe Leu Ala Leu Leu Trp Tyr Gly Leu Asn Ala Met
 245 250

<210> 47
 <211> 782
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 polypeptide

<400> 47
 Ala Ala Leu Glu Ala Met Ala Arg Asp Leu Pro Asp Val Ser Trp Tyr
 1 5 10 15
 Asp Asp Asp Trp Gly Leu Phe Trp Gly Val Phe Ser Pro Pro Glu Phe
 20 25 30
 Gly Gln Lys Val Val Thr Ile Pro Thr Arg Arg Asp Arg Asn Ala Pro
 35 40 45
 Asp Thr Glu Ile Tyr Arg Lys Ala Ser Thr Leu Ala Glu Thr Lys Glu
 50 55 60
 Glu Glu Gln Ser Asp Lys Gly Val Trp Val Phe Val Gln Asp Trp Thr
 65 70 75 80
 Asp Leu Leu Met Val Asp Asp Thr Ala Leu Asp Glu Gln Met Leu Glu
 85 90 95
 Gly Pro Val Glu Glu Ile Val Phe Arg Gly Ile Lys Asn Ser Cys Ala
 100 105 110
 Phe Leu Arg Pro Pro His Ala Asp Met Lys Lys Asp Lys Leu Arg Pro
 115 120 125

Ser	Thr	Arg	Tyr	Ala	Ala	Lys	Gly	Gly	Leu	Ala	Glu	Trp	Phe	Gly	Asp	
130						135					140					
Pro	Glu	Ser	Gly	Glu	Ala	Val	Gln	Val	Pro	Gln	Ala	Arg	Leu	Val	Arg	
145					150					155						160
Leu	Leu	Glu	Gln	Ala	Gly	Thr	Lys	Glu	Ala	Glu	Ser	Ala	Gly	Thr	Gly	
				165					170					175		
Val	Trp	Leu	Tyr	Ala	Ala	Ser	Pro	Thr	Lys	Leu	Val	Phe	Ala	Asp	Asn	
			180					185					190			
Ser	Asn	Leu	Ala	Gly	Ala	Lys	Pro	Leu	Val	Glu	Val	Ala	Arg	Thr	Ala	
		195					200					205				
Gly	Ala	Ser	Asn	Ala	Arg	Val	Gln	Phe	Leu	Arg	Thr	Ser	Ala	Pro	Ala	
	210					215					220					
Thr	Gln	Gly	Gly	Glu	Arg	Ser	Thr	Gly	Gly	Lys	Tyr	Ile	Ile	Met	Pro	
225					230					235					240	
Lys	Gly	Gly	Phe	Leu	Ser	Met	Leu	His	Ala	Pro	Glu	Lys	Gly	Gln	Val	
				245					250					255		
Val	Arg	Ser	Gln	Val	Pro	Thr	Gly	Gly	Leu	Glu	Glu	Asp	Leu	Gln	Ala	
			260					265					270			
Thr	Leu	Ile	Ala	Ser	Ala	Ala	Val	Glu	Asp	Gln	Thr	Ser	Gln	Ala	Gly	
		275					280					285				
Gln	Trp	Asn	Tyr	Ile	Ile	Gln	Gly	Gln	Arg	Gly	Gly	His	Arg	Tyr	Asn	
	290					295					300					
Tyr	Leu	Ile	Ile	Tyr	Ser	Asp	Gly	Gly	Tyr	Phe	Gln	Gly	Tyr	Thr	Ala	
305					310					315					320	
Pro	Asp	Val	Pro	Val	Lys	Asn	Ser	Gly	Glu	Ile	Arg	Trp	Ile	Gln	Lys	
				325					330					335		
Gln	Gly	Thr	Gly	Asp	Asp	Asp	Met	Gly	His	Gln	Ala	Ala	Met	Ala	Thr	
			340					345					350			
Ser	Thr	His	Leu	Thr	Ala	Ala	Asp	Phe	Pro	Val	Arg	Glu	Val	Asn	Ala	
		355					360					365				
Ile	His	Ser	Ser	Leu	Tyr	Ser	Leu	Gly	Leu	Gly	Asp	Thr	Gln	Asp	Pro	
	370					375					380					
Asp	Arg	Trp	Asn	Lys	Phe	Phe	Gln	Lys	Phe	Leu	Pro	Thr	Glu	Gly	Gly	
385					390				395						400	
Glu	Pro	Leu	Val	Ser	Val	Gln	Thr	Gln	Lys	Pro	Tyr	Asp	Met	Lys	Thr	
				405					410					415		
Ile	Phe	Asp	Ser	Ala	Thr	Lys	Leu	Ala	Ala	Lys	Arg	Glu	Glu	Thr	Asn	
			420					425						430		

Ala Gln Lys Gly Lys Trp Val Phe Ile Lys Gly Asp Lys Gly His Asp
 435 440 445
 Leu Ile Phe Cys Asp Glu Ser Lys Leu Ala Gly Gln Ala Phe Pro Asn
 450 455 460
 Glu Asp Ala Val Leu Ser Val Ser Met Thr Gly Ala Gly Asn Ser Val
 465 470 475 480
 Lys Tyr Leu Lys Ala Leu Lys Arg Asn Ala Ala Asp Glu Lys Ala Thr
 485 490 495
 Asp Glu Thr Gly Ala Pro Leu Ala Pro Lys Pro Gly Leu Val Gln Leu
 500 505 510
 Met Ala Glu Pro Glu Thr Gly Glu Glu Ser Val His Val Arg Ala Arg
 515 520 525
 Gly Ser Arg Glu Asn Asp Arg Ile Gly Lys Ser Val Gln Thr Ala Lys
 530 535 540
 Leu Arg Glu Tyr Arg Asn Ser Asn Ser Gly Cys Trp Gln His Ile Asn
 545 550 555 560
 Asn Gly Leu Asp Leu Ile Phe Cys Asp Gly Asn Asn Phe Ser Glu Trp
 565 570 575
 Ser Val Pro Val Glu Thr Ala Arg Val Val Arg Arg Gly Lys Val Gln
 580 585 590
 Phe Leu Arg Gln Val Val Val Glu Asn Pro Val Val His Lys Phe Gly
 595 600 605
 Ser Ala Val Gly Gly Lys Lys Tyr Lys Leu Gly Ser Lys Phe Tyr Gly
 610 615 620
 Leu Phe Thr Ala Ser Glu Phe Gly Gln Val Glu Arg His Gln Val Ala
 625 630 635 640
 Arg Gly Asn Leu Tyr Asp Asp Leu Gln Val Thr Phe Ile Ala Ala Ala
 645 650 655
 Gly Ser Glu Asp Gln Ser Cys Glu Asn Gly Leu Trp Tyr His Leu Asp
 660 665 670
 Tyr Gln Leu Asn Gly Asn Arg Leu Gln Val Thr Lys Leu Ile Val Tyr
 675 680 685
 Ala Asp Gly Thr Phe Phe Asp Gly Tyr Leu Asn Thr Pro Val Pro Val
 690 695 700
 Leu Asp Phe Lys Glu Val Arg Trp Ile Gln Leu Gly Pro Glu Lys Gly
 705 710 715 720
 Ala Lys Leu Phe Glu Pro His Glu Val Val Met Ser Asn Pro Arg Ala
 725 730 735

25

Glu Pro Val Arg Gly Gln Pro Ala Gly Ala Gln Ser Ala Gly Arg Ser
740 745 750
Ala Thr Ala Ala Arg Val Pro Leu Ser Leu Ala Cys Leu Ala Leu Ser
755 760 765
Leu Ala Cys Leu Leu Ala Pro Ala Pro Arg His Pro Ala Met
770 775 780

<210> 48
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 48
Met Ala Glu Pro Glu Thr Gly Glu Glu Ser Val His Val Arg Ala Arg
1 5 10 15
Gly Ser Arg Glu Asn Asp Arg Ile Gly Lys Ser Val Gln Thr Ala Lys
20 25 30
Leu Arg Glu Tyr
35

<210> 49
<211> 146
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 49
Ala Asp Gln Cys Thr Ser Lys Ser Leu Thr Met Thr Gly Gln Trp Pro
1 5 10 15
Val Ala Tyr Ile Gln Phe Ser Cys Phe Ala Lys Arg Lys Leu His Pro
20 25 30
Gln Asp His Phe Pro Cys Asn Asp Leu Asn Pro Gln Thr Lys Thr Cys
35 40 45
Thr Thr Arg Gly Leu Glu Val Asp Leu Phe Tyr Asn Val Gly Ala Val
50 55 60
Ile Gln Lys Arg Ala Arg Val Val Gln Leu Ala Arg Ser His Tyr Met
65 70 75 80
Asp Asn Ser Ala Lys Asn Tyr Glu Gly Val Ala Phe Asp Leu Ala Arg
85 90 95

Arg Val Gly Glu Glu Glu Val Ser Ala Asp Met Pro Gly Gly Val Leu
 100 105 110

Arg Pro Pro Lys Gly Pro Ser Ser Gly Ala Ala Pro Ser Val Ala Leu
 115 120 125

Ala Val Ala Leu Ile Ala Leu Leu Leu Leu Pro Ala Arg Leu Pro Gly
 130 135 140

Ala Met
 145

<210> 50

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 peptide

<400> 50

Glu Glu Glu Val Ser Ala Asp Met Pro Pro Pro Pro Met Asp Ala Ser
 1 5 10 15

Val Glu Glu Glu
 20

<210> 51

<211> 315

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 polypeptide

<400> 51

Gly Leu Ile Leu Leu Thr Ser His Glu Asp Glu Val Pro Val Leu Leu
 1 5 10 15

Gly Leu Leu Val Asn Leu Leu Trp Ser Tyr Phe Tyr Gln Thr Arg Arg
 20 25 30

Ser His Gln Cys Ile Ser Val Ala Ser Gly Ala Ala Thr Arg Arg Ile
 35 40 45

Thr Pro Ser Ser Ser Lys Leu Asn Ala Ile Phe Ala Lys Leu Leu Val
 50 55 60

Lys Ile Glu Asn Asp Asn Ala Phe Asn Gly Phe Ser Ala Met Ile Lys
 65 70 75 80

Pro Val Ala Ala Ala Leu Thr Glu Gln Val Ser Glu Glu Pro Arg Lys
 85 90 95

Ser Thr Arg Thr Leu Cys Pro Leu Leu Asn Val Leu Tyr Pro Arg Cys
 100 105 110
 Lys Gln Pro Arg Val Leu His Ala Leu Glu Ala Phe Arg Trp Leu Ala
 115 120 125
 Ala Arg Leu Ser Arg Pro Ala Gly Asn Lys Lys Ile Glu Lys Tyr Leu
 130 135 140
 Glu Leu Gln Leu Arg Pro Leu Asn Ser Asp Met Leu Ala Lys Ile Val
 145 150 155 160
 Lys Asn Leu Cys Glu Asp Ala Val Met Arg Val Asp Ser Glu Ala Asp
 165 170 175
 Asp Ser Cys Leu Leu Phe Leu Glu Met Ala Ile Gly Leu Leu Lys Gln
 180 185 190
 Phe Glu Pro Ser Asn Arg Val Ser Gln Ala Val Ile Asn Glu Cys Ile
 195 200 205
 Thr Leu Cys His Asn Val Arg Asp Lys Lys Thr Ala Ser Leu Glu Lys
 210 215 220
 Lys Pro Arg His Leu Pro Glu Glu Ala Val Ala Pro Gly Pro Pro Pro
 225 230 235 240
 Pro Pro Pro Pro Pro Pro Gln Pro Gln Pro Leu Leu Pro Gln Ala
 245 250 255
 Gln Pro Pro Pro Gln Pro Leu Gln Pro Pro Pro Pro Pro Pro Pro Pro
 260 265 270
 Pro Pro Pro Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
 275 280 285
 Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Phe Ser Lys Leu Ser Glu
 290 295 300
 Phe Ala Lys Met Leu Lys Glu Leu Thr Ala Met
 305 310 315

<210> 52

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 52

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln
 1 5 10 15

Gln

<210> 53
 <211> 89
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 53
 Leu Pro Leu Tyr Asn Leu Pro Glu Arg Lys Leu Val Glu Val Ala Asn
 1 5 10 15
 Arg Lys Gly Tyr Thr Asn Ser Gly Val Asn Thr Ser Ser Leu Ile Ala
 20 25 30
 Gly Phe Asn Asn Ser Ser His Val Leu Phe Asn Ala Leu Arg Gln Thr
 35 40 45
 Ala Cys Thr Ala Thr Asn Cys Lys Arg Lys Glu Val Gln His Ser Glu
 50 55 60
 Ile Pro Thr Ala Lys Leu His Asn Leu Ala Val Ser Leu Val Ile Leu
 65 70 75 80
 Phe Val Gln Leu Lys Leu Ile Gly Met
 85

<210> 54
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 54
 Val Phe Asn Ala Leu
 1 5

<210> 55
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 55
 Val Phe Asn Ala Leu Pro Pro Pro Pro Leu Ala Asn Phe Val
 1 5 10

<210> 56
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 56
 Ser Ser His Val Leu Phe
 1 5

<210> 57
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 peptide

<400> 57
 Ser Ser His Val Leu Phe Pro Pro Pro Phe Leu Val His Ser Ser
 1 5 10 15

<210> 58
 <211> 147
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 polypeptide

<400> 58
 Glu Lys Pro Asn Thr Val Val Ala Thr Thr Ser Tyr Ser Tyr Pro Ser
 1 5 10 15
 Leu Leu Ala Ala Ile Thr Tyr Arg Arg Pro Gly Ser Asp Asn Ala Thr
 20 25 30
 Phe Val Val Glu Ala His Glu His Phe Pro Ser Ile Gly Leu Ala Lys
 35 40 45
 Trp Tyr Ser Lys Thr Asp Ile Glu Val Lys Tyr Ile Gly Glu Val Phe
 50 55 60
 Glu Glu Glu Thr Thr Leu Gly His Leu Glu Gly Ser Glu Ser Thr Lys
 65 70 75 80
 Gly Ser Ala Phe Pro Glu Trp Thr Asp Asp Ala Ala Lys Arg Phe Val
 85 90 95

30

His Val Ala Val Asn Ile Ala Pro Ser Gly Arg Val Ala Asp Leu Val
100 105 110

Lys Val Met Leu Pro Cys Lys Ser Glu Gly Thr Gly Thr Pro Gly Ala
115 120 125

Glu Ser Val Phe Val Leu Gly Ala Leu Cys Leu Leu Leu Leu Arg His
130 135 140

Ser Ala Met
145

<210> 59
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 59
Glu Ser Val Phe Val Leu Gly Ala Leu Pro Pro Pro Pro Leu Ala Gly
1 5 10 15

Leu Val Phe Val Ser Glu
20

<210> 60
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<221> MOD_RES
<222> (8)
<223> Variable amino acid

<220>
<221> MOD_RES
<222> (25)
<223> Variable amino acid

<400> 60
Val Ala Ala Ala Lys Leu Arg Xaa Val Val Thr Ser Arg Gln Pro Pro
1 5 10 15

Pro Pro Gln Arg Ser Thr Val Val Xaa Arg Leu Lys Ala Ala Ala Val
20 25 30

<210> 61

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 61

Val Val Ala Gly Ala Ala Ala Ala Gly Ala Val His Lys Leu Lys Pro
1 5 10 15

Lys Thr Asn Leu Lys His Val Ala Gly Ala Ala Ala Ala Gly Ala Val
20 25 30

Val